

## CRT Lines-Description of Differences

**C h e p a u m e** --Electroformed Stencils  
--Fine pitch solder ball printing  
--Exceptional Solder paste release from Stencil



**Best Print Repeatability**  
**Patented Vibrating Squeegee**  
**Our Vision Inspect replaces AOI**  
**Bottom Stencil Squeegee wipe –clean**  
**Manual to inline automatic versions**



Milara (Then HTI) pioneered the solderball printing on Semiconductor Wafers for Flip Chips. Today, Milara supports printing on Semi Wafers and other special package substrates. Milara now offers this precision capability on PC board printing with Vision Alignment. The overhead gantry vision alignment makes a good print on first board from a new stencil and the vision aligns the rest to the same precision. The standard system offers large area post print verification within the cycle time of the line so no additional AOI is required. The optional Aceris camera extends this capability to 3D inspection of the whole board every cycle. Milara has solutions for dual wet prints in the same machine. Their auto printer also has an optional paste dispenser on the gantry to repair stencil errors.

[www.milara.com](http://www.milara.com)

# SONY

**Sony Manufacturing  
Systems America, Inc**

High speed rotary placement head  
Patented Bi-directional design  
Second head for larger components  
Over 3000 units in China production  
Narrow modules “train” to high Volume  
Sony SMT equipment includes AOI



**CELLULAR  
MOUNTER**

Sony is a familiar name and they bring their expertise to the Surface Mount market with proven production machines developed over the last 20 years. They have over 3000 sets in China, over 300 in North America and over 500 in Japan as part of a world wide presence. They feature speed, reliability and can offer full software capability and features such as autocalibration. The machines have a small footprint and can be connected by forming a train without the need for conveyors between modules. They have a full service capability in place supporting the North American market and a better cost per placement than other machines for the production market. Sony also offers other SMT equipment such as AOI for post print, post reflow and Combined capability with Sony megapixel camera technology.

Our IPC placement speed is closer to rated because of De-Rate Control Design. [www.sonyms.com](http://www.sonyms.com)



**Make our own X-ray Sources Windows**  
**Positional Interface 6 Axis Positioner OR**  
**Board stays flat- detector tilts**  
**Manual- Low Cost -- UP TO**  
**Programmed Scan Systems –**  
**CT add-on at minimal cost**



New **Revolution** uses new WPI (Windows Position Interface) software and keeps board flat in a small cabinet (detector tilts). **Orbita** offers flat board with 22 x 24” board and larger capability. **Linx** offers inexpensive manual axis machine. **Hawk** offers conventional 6 axis rotation positioner for Failure Analysis and small boards. X-Tek offers solutions to all X-ray markets in addition to the Surface Mount industry. Real 2 micron resolution. X-Tek builds their own Open Tube x-ray sources reducing HV maintenance. See our website for full capability of **CT** and special markets. Systems are easy to use. [www.xtekxray.com](http://www.xtekxray.com)

# WEST BOND

**Complete line of Wire Bond equipment**  
**Features manual and semiautomatic systems**  
**Manual Die bond and bond pull test equipment**  
**Sales and Service of West-Bond equipment**



WestBond has supplied innovative equipment for Wirebonding since 1966 and is maybe best know for their patented single input X-Y-Z micromanipulator. WestBond offers manual and semi auto bonders convertible to wedge or ball bonding, wire pull and die shear testers, manual die bonders and support of their equipment. The equipment is widely used for development of technology and at universities. The equipment enhances the operator skill to quickly and repeat ably make special devices such as deep access cavity bonds and multiple loop stitch bonds. A full range of work holders, microscopes and lighting compliment the machines. [www.westbond.com](http://www.westbond.com)

See [www.CRTechLLC.com](http://www.CRTechLLC.com) for more info --- Member of IMAPS and SMTA

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**Die Bonder- Semi and Auto**  
**Bare chips, flip chips, components**  
**Waffle Pack, tape and reel, Wafers on tape**  
**Dispense adhesive or underfill**  
**Thermal and ultrasonic bond also**



Eberts features the new MAT 6400 semiautomatic die bonder for epoxy, eutectic and flip chip attachment. Multi Chip Module design. All new windows software and complete update of the mechanical and electrical systems. Dispense material and place devices to very high accuracy. Also Automatic MCM assembly with MAT6900 series. [www.MAT-ltd.com](http://www.MAT-ltd.com)

AIC  
Dist for  
**IBL**  
**IEMME**

**Vapor Phase – Batch or true Inline**  
**@ 230C uses current Components for Lead Free**  
**Solved Vapor loss **cost-(doors)** Less than N2 cost**  
**Meets deg/min profiles for Lead Free components**  
**Wave Solder –small to full inline –low cost**



IBL offers cost saving due to patented control of vapors. This gives control of heating rates on the board to meet any required profile. Second cost saving comes from using current components at 230 temperature rating required from convection on Lead Free. LF Convection requires new components for 260C rating and life-testing of materials represents the hidden cost and risk of LF. [www.ibl-loettechnik.de](http://www.ibl-loettechnik.de)  
IEMME offers a wide range of wave solder including lead free at attractive prices. Small batch to do samples and develop processes and check materials. Inline for pallets or edge grip with nitrogen cover and preheat and fluxer



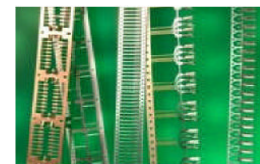
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**Precision Dicing Saws**  
**Re-Engineered Dicing Saws**  
**Precision Scribing Machines**  
**Diaframe wafer breaking Technology**  
**Adhesive component mounting technology**



New hub less **Infinity** blades offer double life, perpendicular cut walls, up to double cutting speed. Expand your throughput without more machines. You must test this new breakthrough technology. Diamond Touch developed a new cutting technology using both scribing and sawing technology and a method to break and separate the die on the **Diaframe** membrane. Diamond Touch machines have newer, easily supported technology that improves the sawing and scribing from what you are used to doing. If sawing or breaking of semiconductor wafers or other hard materials such as glass, ceramic and ferrites and you need methods to transport those materials to other facilities, you need to evaluate this new technology. [www.diamondtouch.com](http://www.diamondtouch.com)



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Batten & Allen has a major commitment to precision stampings for all of the electronics industry. They provide contracted stamping for many companies and well as a line of lead frame. They welcome development of new precision stamping products and can supply high volumes as well as prototypes. In-house plating ensures the final product is totally under their control. Selective plating including gold ensure the proper surface for each section of the stamping. Consider reel format to save cost on high volume jobs. [www.batten-allen.com](http://www.batten-allen.com)



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